

**AMENDMENTS TO THE CLAIMS:**

This listing of the claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

**1. (Previously presented)** A method for generating O1<sup>+</sup> and/or O4<sup>+</sup> oligodendrocytes, said method comprising growing neurosphere (NS) cells in a culture medium that promotes differentiation of NS cells into O1<sup>+</sup> and/or O4<sup>+</sup> oligodendrocytes,  
said culture medium comprising one or more gp130 activators selected from the group consisting of CNTF, oncostatin-M (OSM), IL-6, IL6R/IL6 chimera and IL-11, and wherein said culture medium specifically enhances differentiation into the O1<sup>+</sup> and or O4<sup>+</sup> oligodendrocyte lineage, thereby causing the NS cells to differentiate along the oligodendrocyte lineage into O1<sup>+</sup> and/or O4<sup>+</sup> oligodendrocytes.

**2. (Cancelled)**

**3. (Previously Presented)** The method according to claim 2, wherein the gp130 activator is IL-6.

**4. (Cancelled)**

**5. (Previously Presented)** The method according to claim 1, wherein the cells are dissociated NS cells.

**6. (Cancelled)**

**7. (Previously Presented)** The method according to claim 1, wherein oligodendrocytes of O1<sup>+</sup> lineage are generated.

**8. (Previously Presented)** The method according to claim 1, wherein oligodendrocytes of O4<sup>+</sup> lineage are generated.

**9-53. (Cancelled)**

**54. (Previously presented)** The method in accordance with claim 1, wherein said one or more gp130 activators is the only growth or differentiation agent present in the culture medium.

**55. (Previously presented)** The method in accordance with claim 1, wherein said NS cells are human NS cells.

**56. (Previously presented)** The method according to claim 1, wherein said culture medium promotes myelinating activity.

**57. (Currently amended)** The method according to claim 1, wherein said growth in said culture medium ~~resulted in formation of large and highly branched~~ produces  $O1^+$  and/or  $O4^+$  oligodendrocytes ~~exhibiting with~~ large myelin membranes and more arborization, as compared to control NS cells not grown in said culture medium.

**58. (Previously presented)** The method according to claim 1, wherein only NS cells are present in the growing in the culture medium step.

**59. (Previously presented)** The method according to claim 1, wherein dissociated NS cells are utilized in the growing in the culture medium step.

**60. (Previously presented)** The method in accordance with claim 1, wherein said one or more gp130 activators is the only growth or differentiation agent present in the culture medium to cause NS cells to differentiate along the oligodendrocyte lineage into  $O1^+$  and/or  $O4^+$  oligodendrocytes.